ABSTRACT

In a fiberoptical network, for example in a LAN, spread spectrum modulation is used, for example, CDMA, by providing an electrical digital data signal to a spreading device including a multiplier also receiving the spreading code. Then a modulation is made of the spread signal at radio frequencies, the signal being multiplied by a subcarrier wave generated in a oscillator, whereby the data signal is carried on an RF subcarrier. A control channel signal from a control unit is added to the modulated signal, so that the control signal will be located in the baseband. The added signal is converted to an optical signal transmitted on an output fiber. The control channel signal can be TDMA-modulated using collision detection. Making spectrum spreading in the electrical domain allows the use of standard components developed for example for mobile telephone systems. No wavelength control and no optical filters are necessary, which allows a low cost system to be constructed. Alternatively, the spreadspectrum data signal can be located in the baseband and the control channel on a subcarrier or both the data and the control channel can be put on subcarriers.